

## PCMO SPIN-COAT DEPOSITION

### ABSTRACT OF THE INVENTION

A  $\text{Pr}_{1-x}\text{Ca}_x\text{MnO}_3$  (PCMO) spin-coat deposition method for  
5 eliminating voids is provided, along with a void-free PCMO film structure.  
The method comprises: forming a substrate, including a noble metal, with  
a surface; forming a feature, such as a via or trench, normal with respect  
to the substrate surface; spin-coating the substrate with acetic acid; spin-  
coating the substrate with a first, low concentration of PCMO solution;  
10 spin-coating the substrate with a second concentration of PCMO solution,  
having a greater concentration of PCMO than the first concentration;  
baking and RTA annealing (repeated one to five times); post-annealing;  
and, forming a PCMO film with a void-free interface between the PCMO  
film and the underlying substrate surface. The first concentration of  
15 PCMO solution has a PCMO concentration in the range of 0.01 to 0.1  
moles (M). The second concentration of PCMO solution has a PCMO  
concentration in the range of 0.2 to 0.5 M.